

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No.: 10/516,460

Attorney Docket No.: Q85159

AMENDMENTS TO THE DRAWINGS

Please replace Figs. 4a, 4b and 5 with the replacement drawings submitted herewith.

No new matter has been added.

Attachments: Two (2) Replacement Sheets (Figs. 4a-5)

REMARKS

Claims 1-3 are all the claims pending in the application.

Claims 1-3 are rejected.

Figures 4(a), 4(b) and 5 is required to be designated as --Prior Art--.

The abstract is objected to for minor informalities.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morcos et al. (U.S. Patent No. 5,677,963) in view of Nonnenmann (U.S. Patent No. 4,242,606).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morcos et al. (U.S. Patent No. 5,677,963) in view of Lathrop (U.S. Patent No. 3,659,124).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morcos et al. (U.S. Patent No. 5,677,963) and Lathrop (U.S. Patent No. 3,659,124) in view of Nonnenmann (U.S. Patent No. 4,242,606).

The Applicant traverses the rejections and requests reconsideration.

Drawings

The Applicant submits replacement drawings overcoming the grounds for their rejection.

Specification

The Applicant submits a new Abstract to overcome the objections thereto.

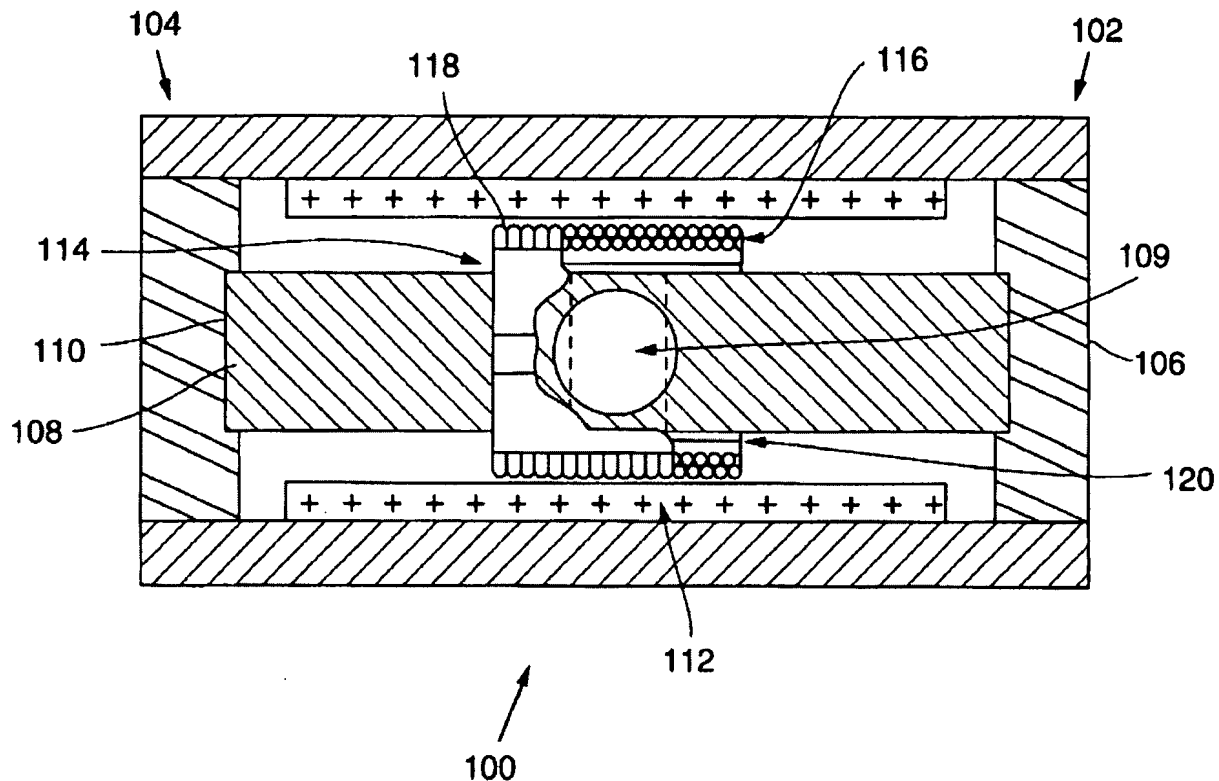
Claim Rejections Under 35 U.S.C. 103(a)

Rejection of Claim 1 based on Morcos et al. in view of Nonnenmann

The present invention as recited in claim 1 requires an armature coil that is formed into a coil-shaped structure having a cavity portion. It further requires a reinforcing beam made of non-magnetic and highly rigid material that is formed at a substantial center of the cavity portion. In the exemplary embodiment shown in Fig. 2, the armature coil 2 is formed into a coil shape. The reinforcing beam 10 is placed in the substantial center of the cavity defined by the coil. The reinforcing beam is made of a non-magnetic and highly rigid material.

In rejecting the claims based on the combined teachings of Morcos and Nonnenmann, the Examiner contends that Morcos teaches a reinforcing beam. Morcos suggests a linear voice coil actuator. A closed housing 102 is provided, which has field plates 104 and are connected by end plates 106. A coil 116 is wound around a bobbin 120. **Importantly, a core 108 is provided and the coil 116 and the bobbin 120 are free to move along the length of the core. (see 4:46-50 of Morcos).**

The Applicants respectfully submit that, the coil 116 and the bobbin 120, define a cavity. However, there is no reinforcing beam suggested by Morcos, as required by the present invention. Specifically, Marcos does not disclose that that the coil 116 and the bobbin are provided with a reinforcing beam. **In fact, providing a reinforcing beam will prevent the coil 116 and the bobbin 120 from moving around the core 108.**



Nonnemmann does not overcome the deficiency noted in the structure of Morcos. The Examiner appears to consider the rod 71 of Nonnenmann to be equivalent to the reinforcing beam. However, the rod 71 (although made of a non-magnetic material, namely brass) is simply an extension of the regulator rod 12. It does not provide any type of reinforcement to the coil. It is not a reinforcing beam of the coils 62 and 63.

The reinforcing member 10 of Claim 1 of the present application is integrated with the coil 11, and the, reinforcing member 10 and the coil 11 move together along the axis direction.

On the contrary, in Nonnenmann, the rod 71 is an extended portion of the regulator rod 12, and the longitudinal tubular ferrite core 69 mounted on the rod 71 slides in the central axial bore 68 of the spool body 61 on which the coils 62, 63 are mounted. It is not integrated with the coils 62, 63. Importantly, the rod 71 is not a reinforcing beam which is integrated with the coils 61, 62.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. MPEP 2143 *citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Applicants respectfully submit that the Examiner has not satisfied the burden of establishing *prima facie* obviousness at least because he has not satisfied the “all limitations” prong of the three prong test for obviousness. Specifically, the Examiner has not shown that the combined teachings of Morcos and Nonnenmann do not suggest the invention as a whole including at least the limitations that are discussed above. Specifically, the combined teachings of Morcos and Nonnenmann do not suggest at least the reinforcement beam as required by the present invention.

Since the “all limitations” prong of the three prong test fails, the motivation to combine the test must also fail.

Rejection of Claim 2 based on Morcos et al. in view of Lathrop

Claim 2 is different from claim 1 to the extent that claim 2 requires a rigid reinforcing member which has the same shape as the coil at an end of the coil. In the exemplary embodiment of Fig. 2, such a rigid reinforcing member reads on item 11.

For the reasons similar to the ones discussed above, Morcos does not suggest such a reinforcing member at the end of the coil.

Lathrop does not overcome the deficiency noted in the teaching of Morcos. Claim 2 is further amended to clarify the subject matter of the present invention.

Rejection of Claim 3 based on Morcos et al. and Lathrop in view of Nonnenmann

Claim 3 requires both a reinforcing member at one end and a reinforcing beam in the substantial center. Therefore, it appears to require a combination of the limitations in claims 1 and 2.

Claim 3 should be allowable for the same reasons as claims 1 and 2.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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